

What is claimed is:

1 1. An apparatus for storing an elongate member comprising:  
2 a support frame;  
3 a spool rotatably supported by said support frame, said spool having a cylindrical body  
4 and a pair of flanges extending radially outward from opposite ends of said cylindrical body;  
5 a spring rewind motor operatively disposed between said support frame and said spool,  
6 said spring rewind motor being capable of exerting a torque on said spool for counteracting a  
7 rotational displacement of said spool from an initial position in a first rotational direction;  
8 a viscous clutch assembly operatively disposed between said spool and said support frame  
9 to exert a retarding torque between said spool and said support frame, said viscous clutch  
10 assembly comprising a housing defining a sealed chamber, a viscous liquid contained therein,  
11 and a plurality of vanes disposed in said sealed chamber; and

12 a unidirectional clutch assembly operatively disposed between said spool and said support  
13 frame, said unidirectional clutch assembly operating disengage said viscous clutch assembly  
14 when said spool is rotated in said first rotational direction, thereby permitting said spool to rotate  
15 without said viscous clutch exerting a substantial retarding torque, said unidirectional clutch  
16 assembly further operating to engage said viscous clutch assembly such that said viscous clutch  
17 exerts a retarding torque between said spool and said frame for limiting rotational velocity of said  
18 spool when said spool is rotated in a second rotational direction.

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1 2. The apparatus of claim 1, wherein:  
2 said unidirectional clutch assembly comprises a ramp and ball overrunning clutch.

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1 3. The apparatus of claim 1, wherein:  
2 said unidirectional clutch assembly comprises a ratchet and pawl.

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1 4. The apparatus of claim 1, wherein:  
2 said unidirectional clutch assembly comprises a sawtooth axial gear clutch.

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1 5. The apparatus of claim 1, wherein:

2 said unidirectional clutch assembly comprises a ramp and roller overrunning clutch.  
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1 6. The apparatus of claim 1, wherein:

2 said unidirectional clutch assembly comprises a helical spring clutch.  
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1 7. The apparatus of claim 1, wherein:

2 said vanes comprise a plurality of stator disks and rotor disks defining a plurality of  
3 annular gaps therebetween, such that said viscous liquid is sheared in said plurality of annular  
4 gaps to provide a multi-plate viscous dampening.  
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1 8. The apparatus of claim 1, wherein:

2 said vanes comprise a plurality of turbine vanes.  
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1 9. An apparatus for storing an elongate member comprising:

2 a support frame;

3 a spool rotatably supported by said support frame, said spool having a cylindrical body  
4 and a pair of flanges extending radially outward from opposite ends of said cylindrical body;

5 a spring rewind motor operatively disposed between said support frame and said spool,  
6 said spring rewind motor being capable of exerting a torque on said spool for counteracting a  
7 rotational displacement of said spool from an initial position in a first rotational direction;

8 a unidirectional speed retarding apparatus disposed between said spool and said support  
9 frame, said unidirectional speed retarding apparatus comprising viscous clutch means and  
10 unidirectional clutch means, said viscous clutch means comprising means for providing a  
11 velocity-dependent retarding torque between said spool and said support frame, said  
12 unidirectional clutch means comprising means for disengaging said viscous clutch assembly  
13 when said spool is rotated in said first rotational direction, thereby permitting said spool to rotate  
14 without said viscous clutch exerting a substantial retarding torque, said unidirectional clutch  
15 means further comprising means to engage said viscous clutch assembly such that said viscous  
16 clutch exerts a retarding torque between said spool and said frame for limiting rotational velocity  
17 of said spool when said spool is rotated in a second rotational direction.

1 10. The apparatus of claim 9, wherein:  
2 said unidirectional clutch means comprises a ramp and ball overrunning clutch.  
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1 11. The apparatus of claim 9, wherein:  
2 said unidirectional clutch means comprises a ratchet and pawl.  
3

1 12. The apparatus of claim 9, wherein:  
2 said unidirectional clutch means comprises a sawtooth axial gear clutch.  
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1 13. The apparatus of claim 9, wherein:  
2 said unidirectional clutch means comprises a ramp and roller overrunning clutch.  
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1 14. The apparatus of claim 9, wherein:  
2 said unidirectional clutch means comprises a helical spring clutch.  
3

1 15. The apparatus of claim 9, wherein:  
2 said viscous clutch means comprises a plurality of stator disks and rotor disks defining a  
3 plurality of annular gaps therebetween, such that said viscous liquid is sheared in said plurality of  
4 annular gaps to provide a multi-plate viscous dampening.  
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1 16. The apparatus of claim 9, wherein:  
2 said viscous clutch means comprise a plurality of turbine vanes.